

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of generating a text sentence in a target language different from a source language, based on one or more words in the source language input as keywords, the method comprising:

an input step in which the one or more keywords in the source language are input via an input means without inputting a full text sentence in the source language, the one or more keywords being a segment of the full text sentence in the source language;

a sentence pair extraction step in which a sentence pair extraction means extracts one or more sentence pairs each including at least one of the keywords from a parallel corpus database including partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair;

a keyword-related phrase storage step in which a target-language keyword-related phrase corresponding to each source-language keyword-related phrase is detected from the partial correspondence information of each sentence pair and stored as a pair of keyword-related phrases in the source language and in the target language in the form of a keyword-related phrase table in a storage means;

a text sentence candidate generation step in which a text candidate generation means performs dependency relationships of each keyword-related phrase in the source language and in the target language assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-

language text sentence candidates by assuming dependency relationships among the keyword-related phrases; and

an output step in which at least one text sentence candidate is output from an output means corresponding to the full text sentence in the source language.

2. (Previously Presented) The method according to claim 1, further comprising, after the sentence pair extraction step, a keyword-related phrase presentation step in which if, in the sentence pair extraction step, two or more sentence pairs are extracted for a keyword input in the input step and if two or more different keyword-related phrases in the source language are detected from the partial correspondence information, then the detected two or more keyword-related phrases in the source language are presented to a user such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases,

wherein in the keyword-related phrase storage step, if the user selects a keyword-related phrase from the presented two or more keyword-related phrases, a keyword-related phrase in the target language corresponding to the selected keyword-related phrase in the source language is described in the keyword-related phrase table.

3. (Previously Presented) The method according to claim 1 or 2, wherein
each time one keyword is input in the input step, the sentence pair extraction step and the keyword-related phrase storage step are performed;

the method further comprising:

a co-occurrence word extraction step in which one or more co-occurrence words which co-occur with the keyword in the sentence pair are extracted and the extracted one or more co-occurrence words are described in a co-occurrence word table; and

a co-occurrence word presentation step in which the one or more co-occurrence words are presented to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

and wherein if one or more co-occurrence words are selected by the user, the selected one or more co-occurrence words are input as new keywords in the input step, and

the text sentence candidate generation step is performed after completion of inputting all keywords.

4. (Previously Presented) The method according to claim 1, wherein in the sentence pair extraction step, at the beginning of the step, one or more morphemes are added to or subtracted from a keyword input in the input step or a keyword input in the input step is replaced with a similar word.

5. (Previously Presented) The method according to claim 1, wherein

a text sentence is generated for each of two or more target languages by performing the sentence pair extraction step, the keyword-related phrase storage step, and the text sentence candidate generation step for each combination of source and target languages; and

in the output step, text sentence candidates of respective two or more languages are output.

6. (Previously Presented) The method according to claim 1, wherein
in the text sentence candidate generation step,
the text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates; and
a source-language text candidate generation means assumes dependency relationships among keyword-related phrases in the source language described in the keyword-related phrase table and generates one or more source-language text sentence candidate,
in the output step, at least one set of text sentences in the source and target languages is output from the output means.

7. (Previously Presented) The method according to claim 1, further comprising, after the text sentence candidate generation step, an evaluation step in which an evaluation means evaluates a score for each text sentence candidate, wherein
in the output step, at least one text sentence candidate with the highest score is selected based on the evaluation and the selected text sentence candidate is output.

8. (Currently Amended) An apparatus for generating a text sentence in a target language different from a source language, based on one or more words in the source language input as keywords, the apparatus comprising:

input apparatus for inputting the one or more keywords in the source language without inputting a full text sentence in the source language, the one or more keywords being a segment of the full text sentence in the source language;

a parallel corpus database including partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair;

a sentence pair extraction means for extracting one or more sentence pairs each including at least one of the keywords from the parallel corpus database;

a keyword-related phrase storage means for detecting a target-language keyword-related phrase corresponding to each source-language keyword-related phrase from the partial correspondence information of each sentence pair and storing the detected target-language keyword-related phrase in the form of a keyword-related phrase table;

a text candidate generation means that performs dependency relationships of each keyword-related phrase in the source language and in the target language described in the keyword-related phrase table and generates one or more target-language sentence candidates by assuming dependency relationships among the keyword-related phrases~~assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates;~~ and

an output means for outputting at least one text sentence candidate corresponding to the full text sentence in the source language.

9. (Previously Presented) The apparatus according to claim 8, further comprising a source-language keyword-related phrase candidate presentation means that determines, in a case in which two or more sentence pairs corresponding to an input keyword have been extracted by the sentence pair extraction means, whether two or more different keyword-related phrases in the source language are detected from the partial correspondence information associated with the two or more sentence pairs and that, if so, presents to a user the detected two or more keyword-related phrases such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases in the source language via the input means, wherein

if the user selects a keyword-related phrase from the presented two or more keyword-related phrases, the keyword-related phrase storage means stores a keyword-related phrase in the target language corresponding to the selected keyword-related phrase in the source language in the keyword-related phrase table.

10. (Previously Presented) The apparatus according to claim 8 or 9, wherein each time one keyword is input via the input means, the sentence pair extraction means and the keyword-related phrase storage means operate,

the apparatus further comprising:

a co-occurrence word extraction means for extracting one or more co-occurrence words which co-occur with the keyword in the sentence pair and describing the extracted one or more co-occurrence words in a co-occurrence word table; and

a co-occurrence word presentation means for presenting the one or more co-occurrence words to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

and wherein if one or more co-occurrence words are selected by the user via the input means, the selected one or more co-occurrence words are input as new keywords, and

the text candidate generation means operates after completion of inputting all keywords.

11. (Previously Presented) The apparatus according to claim 8, further comprising a keyword modification means for modifying a keyword input via the input means by adding or subtracting one or more morphemes to or from the keyword or replacing the keyword with a similar word, wherein

the sentence pair extraction means performs keyword modification using the keyword modification means.

12. (Previously Presented) The apparatus according to claim 8, wherein the parallel corpus database includes partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair;

the sentence pair extraction means, the keyword-related phrase storage means, and the text candidate generation means perform processing for each combination of source and target languages; and

text sentence candidates of respective two or more languages are output from the output means.

13. (Previously Presented) The apparatus according to claim 8, wherein the text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates,

the apparatus further comprising source-language text candidate generation means that assumes dependency relationships among keyword-related phrases in the source language described in the keyword-related phrase table and generates one or more source-language text candidate,

and wherein at least one set of text sentences in the source and target languages is output from the output means.

14. (Previously Presented) The apparatus according to claim 8, further comprising an evaluation means for evaluating the one or more text sentence candidates.

15. (Previously Presented) The method according to claim 1, wherein each time one keyword is input in the input step, the sentence pair extraction step and the keyword-related phrase storage step are performed, the method further comprising:

a co-occurrence word extraction step in which one or more co-occurrence words which co-occur with the keyword in the sentence pair are extracted and the extracted one or more co-occurrence words are described in a co-occurrence word table; and

a co-occurrence word presentation step in which the one or more co-occurrence words are presented to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

wherein if one or more co-occurrence words are selected by the user, the selected one or more co-occurrence words are input as new keywords in the input step, and the text sentence candidate generation step is performed after completion of inputting all keywords,

wherein in the text sentence candidate generation step,

the text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates; and

a source-language text candidate generation means assumes dependency relationships among keyword-related phrases in the source language described in the keyword-related phrase table and generates one or more source-language text sentence candidate,

in the output step, at least one set of text sentences in the source and target languages is output from the output means.

16. (Previously Presented) The method according to claim 1, wherein each time one keyword is input in the input step, the sentence pair extraction step and the keyword-related phrase storage step are performed, the method further comprising:

a co-occurrence word extraction step in which one or more co-occurrence words which co-occur with the keyword in the sentence pair are extracted and the extracted one or more co-occurrence words are described in a co-occurrence word table; and

a co-occurrence word presentation step in which the one or more co-occurrence words are presented to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

wherein if one or more co-occurrence words are selected by the user, the selected one or more co-occurrence words are input as new keywords in the input step,

the text sentence candidate generation step is performed after completion of inputting all keywords, and

after the text sentence candidate generation step, an evaluation step in which an evaluation means evaluates each text sentence candidate,

wherein in the output step, at least one text sentence candidate is selected based on the evaluation and the selected text sentence candidate is output.

17. (Previously Presented) The apparatus according to claim 8, wherein each time one keyword is input via the input means, the sentence pair extraction means and the keyword-related phrase storage means operate, the apparatus further comprising:

a co-occurrence word extraction means for extracting one or more co-occurrence words which co-occur with the keyword in the sentence pair and describing the extracted one or more co-occurrence words in a co-occurrence word table; and

a co-occurrence word presentation means for presenting the one or more co-occurrence words to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

and wherein if one or more co-occurrence words are selected by the user via the input means, the selected one or more co-occurrence words are input as new keywords, and

the text candidate generation means operates after completion of inputting all keywords, wherein the text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates,

the apparatus further comprising source-language text candidate generation means that assumes dependency relationships among keyword-related phrases in the source language described in the keyword-related phrase table and generates one or more source-language text candidate, and

wherein at least one set of text sentences in the source and target languages is output from the output means.

18. (Previously Presented) The apparatus according to claim 8, wherein each time one keyword is input via the input means, the sentence pair extraction means and the keyword-related phrase storage means operate, the apparatus further comprising:

a co-occurrence word extraction means for extracting one or more co-occurrence words which co-occur with the keyword in the sentence pair and describing the extracted one or more co-occurrence words in a co-occurrence word table; and

a co-occurrence word presentation means for presenting the one or more co-occurrence words to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table,

wherein if one or more co-occurrence words are selected by the user via the input means, the selected one or more co-occurrence words are input as new keywords, and

the text candidate generation means operates after completion of inputting all keywords, an evaluation means for evaluating the one or more text sentence candidates.

19. (Previously Presented) The method according to claim 1, further comprising, after the text generation candidate generation step, an evaluation step in which an evaluation means evaluates a score for each text sentence candidate,

wherein in the output step, at least one text sentence candidate with a score greater than a predetermined threshold is selected based on the evaluation and the selected text sentence candidate is output.

20. (Previously Presented) The method according to claim 1, further comprising, after the text generation candidate generation step, an evaluation step in which an evaluation means evaluates a score for each text sentence candidate,

wherein in the output step, at least one text sentence candidate with a score greater than a predetermined threshold, or as many text candidates with highest scores as a predetermined number N are selected based on the evaluation and the selected text sentence candidate is output.

21. (New) A method of generating a text sentence in a target language different from a source language, based on one or more words in the source language input as keywords, the method comprising:

an input step in which the one or more keywords in the source language are input via an input means without inputting a full text sentence in the source language, the one or more keywords being a segment of the full text sentence in the source language;

a sentence pair extraction step in which a sentence pair extraction means extracts one or more sentence pairs each including at least one of the keywords from a parallel corpus database including partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair;

a keyword-related phrase storage step in which a target-language keyword-related phrase corresponding to each source-language keyword-related phrase is detected from the partial correspondence information of each sentence pair and stored in the form of a keyword-related phrase table in a storage means, wherein the target-language keyword-related phrase is a content word;

a word sequence generation rule acquisition step in which a word sequence generation rule acquisition unit searches for a pair of sentences including the content word from a parallel corpus and performs morphological analysis and syntactic analysis, extracts word sequences including the content word from the pair of sentences, and acquires and stores a word sequence generation rule indication how to generate the keyword-related phrase; and

a word generation candidate generation step in which a word sequence candidate generator generates word sequence candidates of the target language included in a text sentence candidate in accordance with the word sequence generation rules;

a text sentence candidate generation step in which a text candidate generation means performs dependency relationships of each keyword related phrase in the source language and in the target language described in the keyword-related phrase table and/or the word sequence candidates in the source language and n the target language, and generates one or more target language text sentence candidates by assuming dependency relationships among the keyword-related phrases and/or the word sequence candidates; and

an output step in which at least one text sentence candidate is output from an output means corresponding to the full text sentence in the source language.

22. (New) An apparatus for generating a text sentence in a target language different from a source language, based on one or more words in the source language input as keywords, the apparatus comprising:

input apparatus for inputting the one or more keywords in the source language without inputting a full text sentence in the source language, the one or more keywords being a segment of the full text sentence in the source language;

a parallel corpus database including partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair;

a sentence pair extraction means for extracting one or more sentence pairs each including at least one of the keywords from the parallel corpus database;

a keyword-related phrase storage means for detecting a target-language keyword-related phrase corresponding to each source-language keyword-related phrase from the partial correspondence information of each sentence pair and storing the detected target-language keyword-related phrase in the form of a keyword-related phrase table;

a word sequence generation rule acquisition unit for acquiring a word sequence generation rule indicating how to generate the keyword-related phrase from a word sequence by searching for a pair of sentences including the content word from a parallel corpus, performing morphological analysis and syntactic analysis, extracting a word sequence including the content word from the pair of sentences,

a word sequence candidate generator for generating word sequence candidates in the target language included in a text sentence candidate in accordance with the word sequence generation rules;

a text candidate generation means that performs dependency relationships of each keyword related phrase in the source language and in the target language described in the keyword-related phrase table and/or the word sequence candidates in the source language and in the target language, and that generates one or more target language text sentence candidates by assuming dependency relationships among the keyword-related phrases and/or the word sequence candidates; and

an output means for outputting at least one text sentence candidate corresponding to the full text sentence in the source language.